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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,434	07/24/2001	Donald Nelson	VTI015A	5963

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EXAMINER

HARRISON, CHANTE E

ART UNIT	PAPER NUMBER
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2672

DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/912,434

Applicant(s)

NELSON ET AL.

Examiner

Chante Harrison

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-9 and 11-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is responsive to communications: Amendment B, filed on 10/20/03.

This action is made FINAL.

2. Claims 1-28 are pending in the case. Claims 1, 9 and 13 are independent claims. Claims 1-12 have been amended. Claims 13-19 have been added.

Drawings

1. The proposed drawing corrections and/or the proposed substitute sheets of drawings, filed on 9/16/03 have been approved by Examiner. Thus, the objection to the drawings for including and/or not including reference signs mentioned in the description is withdrawn.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 7-9 and 11-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Louis Rosenberg, U.S. Patent 6,061,004, 5/2000.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As per independent claim 1, Rosenberg discloses sensing a manipulation of a user object (abstract; col. 6, ll. 44-56) configured to be coupled to a host computer system that includes a graphical environment (Fig. 1); updating data values (i.e. rate or velocity) associated with at least one of displayed orientation and a displayed shape of a graphical image in the graphical environment in relation to the sensed manipulation

(abstract; Fig. 1A; col. 2, ll. 25-50; col. 3, ll. 55-61; col. 9, ll. 25-45); and changing the relationship between the sensed manipulation and the at least one of the displayed orientation and the displayed shape of the graphical image based on a simulated interaction of the graphic image with a graphical object (i.e. when the displayed object passes a boundary that is solid a collision force is applied to the object, thereby changing its relationship to the sensed manipulation) (col. 32, ll. 27-39; col. 39, ll. 18-34).

As per dependent claim 2, Rosenberg discloses calculating one of the displayed orientation (i.e. position) and the displayed shape of the graphical image is calculated by an algorithm (col. 4, ll. 9-20).

As per dependent claim 3, Rosenberg discloses calculating include using constraints to calculate the at least one of the displayed orientation (i.e. position) and the displayed or shape of the graphical image (i.e. the processor performs calculations for different force processes that make the displayed object respond by a change in display position/shape) (col. 2, ll. 19-25; col. 3, ll. 58-61; col. 18, ll. 10-32).

As per dependent claim 4, Rosenberg discloses calculating includes using numerical methods to calculate the at least one of the displayed orientation (i.e. position) and the displayed shape of the graphical image (i.e. the processor performs calculations for different force processes that make the displayed object respond by a change in display position/shape) (col. 18, ll. 15-44).

As per dependent claims 7, 11 and 18, Rosenberg discloses the object is configured to provide haptic feedback (col. 2, ll. 29-31).

As per dependent claims 8, 12 and 19, Rosenberg discloses the haptic feedback is associated with the simulated interaction of the graphical image and the graphical object (col. 2, ll. 30-40).

As per independent claim 9, Rosenberg discloses calculating a position or shape of the graphical image using an algorithm using numerical methods (col. 18, ll. 15-34) and a method as claimed in independent claim 1. Therefore the rationale applied in the rejection of claim 1 applies herein.

3. Claims 13 and 18-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Erik Shahoian, U.S. Patent 6,697,044, 2/2004.

As per independent claim 13, Shahoian discloses sensing a manipulation of an object configured to be coupled to a host computer system including a graphical environment (col. 1, ll. 15-30; col. 13, ll. 24-26), updating data values associated with at least one of a position and a shape of an articulated graphical image in the graphical environment based on the sensed manipulation (i.e. a change in the position of the gripper link members due to user fingertip motion, directly manipulates the displayed graphical object, e.g. a hand) (col. 12, ll. 36-43; col. 13, ll. 35-39), the articulated graphical image

having a first image portion and a second image portion (i.e. first and second portions correspond to the fingers of a displayed virtual hand) (col. 13, ll. 35-38), the first image portion being movable with respect to the second image portion (i.e. a gripper control, having link members that move relative to one another, is used to input finger movements to control a computer generated displayed virtual hand) (col. 12, ll. 36-43; col. 13, ll. 10-12, 25-40; col. 14-15, 50-5) and changing the relationship between the sensed manipulation and the at least one of the position and shape of the articulated graphical image (i.e. provisions for a vibration when objects are encountered; and the motion of the gripper link members controls the displayed virtual hand) (col. 13, ll. 10-12, 35-38, 45-62; col. 14-15, ll. 50-5)

As per dependent claim 18, Shahoian discloses the object is configured to provide haptic feedback (col. 8, ll. 38-40).

As per dependent claim 19, Shahoian discloses the haptic feedback is associated with a simulated interaction of the graphical image and the graphical object (col. 13, ll. 40-60; col. 16, ll. 37-40).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg as applied to claim 1 above, and further in view Erik Shahoian, U.S. Patent 6,697,044, 2/2004.

As per dependent claim 6, Rosenberg fails to specifically disclose the object is articulatable, which Shahoian discloses (col. 12, ll. 37-46). It would have been obvious to one of skill in the art to incorporate Shahoian's disclosure of an articulatable object with the disclosure of Rosenberg because Rosenberg discloses using any of a plurality of isotonic input devices which sense the degrees of freedom that the device is moved, where each input device comprises a linking (i.e. articulated) member that is manipulated (col. 2, ll.10-18).

5. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shahoian as applied to claim 13 above, and further in view of Louis Rosenberg, U.S. Patent 6,061,004, 5/2000.

As per dependent claim 14, Rosenberg discloses calculating the at least one of the position and shape of the articulated graphical image (col. 4, ll. 9-20), which Shahoian fails to specifically disclose. It would have been obvious to one of skill in the art to incorporate Rosenberg's teaching of calculating a position or shape of the articulated graphical image with the disclosure of Shahoian because Shahoian teaches determining the amount of manipulation of the input control (i.e. gripper/ master device), which directly manipulate and moves the slave unit (i.e. articulated graphical displayed image) in the same fashion, which results in a determination and showing of the displayed articulated graphical image in a changed position and/or shape (col.1,ll. 42-51).

As per dependent claim 15, Rosenberg discloses calculating include using constraints...(col. 2, ll. 19-25; col. 3, ll. 58-61; col. 18, ll. 10-32), which Shahoian discloses (col. 12-13, ll. 49-15).

As per dependent claim16, Rosenberg discloses calculating includes using numerical methods...(col. 18, ll. 15-34), which Shahoian discloses (col. 13, ll.15-21).

6. Claims 5, 10 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments filed 9/16/03 have been fully considered but they are not persuasive.

With respect to independent claims 1 and 9, Applicant argues Rosenberg does not teach updating at least one of the displayed orientation and the displayed shaped of the displayed graphical image.

In response, Rosenberg teaches utilizing both isotonic and isometric controllers to manipulate the displayed graphical object's position (i.e. orientation) by either the user applied force to an input device or through user manipulation of an input device that directly maps to the position of the displayed graphical object (col. 2, ll. 25-50; col. 3, ll. 55-61). Hence, Rosenberg teaches updating the displayed graphical object's displayed orientation as a result of manipulation by user input.

With respect to claims 1 and 9, Applicant argues Rosenberg does not teach changing the relationship between the sensed manipulation and the at least one of the displayed orientation and the displayed shaped of the graphical image.

In response, Rosenberg teaches user designation of "pass-through" objects or as "solid" objects that provide barrier forces that do not allow the cursor to pass into the objects (col. 32, ll. 27-39). Rosenberg additionally teaches providing any of a variety of

forces in such instances where a user manipulates the displayed graphical object into, over or beyond a boundary or limit (col. 39, ll.18-34). Rosenberg specifically teaches applying a spring force in the case where a displayed graphical object is moved (i.e. orientation change) or has had a change in size (i.e. change in shape) (col. 39, ll.18-34). Thus, Rosenberg teaches changing the relationship between the sensed manipulation and the at least one of the displayed orientation and the displayed shaped of the graphical image.

Therefore the rejection in view of Rosenberg is maintained.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Chante Harrison whose telephone number is (703) 305-3937.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi, can be reached at (703) 305-4713.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:


(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ch

June 11, 2003


MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600